

We claim:

1. A material comprising:
5 a polyurethane gel that includes an uncured reaction product of polyols and polyisocyanates, and having elastic microspheres as filler.
2. The material according to claim 1, wherein the elastic microspheres includes polymer material.
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3. The material according to claim 2, wherein the polymer material includes polyolefin.
4. The material according to claim 2, wherein the polymer material includes
15 expanded polymer material.
5. The material according to claim 1, wherein the elastic microspheres have a cover layer coating that includes an inorganic material.
- 20 6. The material according to claim 5, wherein the inorganic material includes calcium carbonate.
7. The material according to claim 1, wherein the elastic microspheres have a diameter in a range of 10 μm to 150 μm .
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8. The material according to claim 1, wherein the percentage of elastic microspheres in the material is from 0.1% to 10 % of total material weight.
9. The material according to claim 1, wherein the polyol component of the
30 polyurethane gel has an isocyanate functionality of at least 5.2.

10. The material according to claim 1, wherein the polyol component of the polyurethane gel has an isocyanate functionality of at least 6.5.
- 5 11. The material according to claim 1, wherein the polyol component of the polyurethane gel has an isocyanate functionality of at least 7.5.
12. The material according to claim 1, wherein the polyol component of the polyurethane gel includes a mixture of:
- 10 a first component that includes one or more polyols having hydroxyl numbers below 112 and second component that includes one or more polyols having hydroxyl numbers in the range from 112 to 600, wherein a weight ratio of the first component to the second component is in a range from 90:10 to 10:90, an isocyanate index of a reaction mixture of the first component and the second
- 15 component lies in a range from 15 to 60 and a product of isocyanate functionality and functionality of the polyol component is at least 6.
13. The material according to claim 1, wherein the polyol component of the polyurethane gel includes one or more polyols having a molecular weight in a
- 20 range between 1,000 and 12,000 and an OH number in a range between 20 and 112 and a product of isocyanate functionality and functionality of the one or more polyols is at least 5 and an isocyanate index is in a range between 15 and 60.
14. The material according to claim 1, further including isocyanates utilized in
- 25 producing the polyurethane gel, wherein the isocyanates are of a formula $Q(NCO)_n$, in which n represents 2 to 4 and Q selected from the group consisting of an aliphatic hydrocarbon radical having 8 to 18 C atoms, a cycloaliphatic hydrocarbon radical having 4 to 15 C atoms, an aromatic hydrocarbon radical having 6 to 15 C atoms and an araliphatic hydrocarbon radical having 8 to 15 C
- 30 atoms.

15. The material according to claim 1, wherein the polyurethane gel includes pure form isocyanates utilized in production of the polyurethane gel.
- 5 16. The material according to claim 1, wherein the polyurethane gel includes modified isocyanates utilized in production of the polyurethane gel.
17. The material according to claim 1, wherein the polyurethane gel includes urethanised isocyanates utilized in production of the polyurethane gel.
- 10 18. The material according to claim 1, wherein the polyurethane gel includes allophanised isocyanates utilized in production of the polyurethane gel.
19. The material according to claim 1, wherein the polyurethane gel includes biurethised isocyanates utilized in production of the polyurethane gel.
- 15 20. A material having improved elasticity and comprising:
a polyurethane gel that includes an undercured reaction product of polyols and polyisocyanates, and having elastic microspheres as filler, wherein the
20 percentage of elastic microspheres in the material is from about 3% to about 10% total material weight and the elastic microspheres have a cover layer coating of calcium carbonate, and whereby the resulting material has about the same Shore hardness as the polyurethane gel without filler but has greater elasticity than the polyurethane gel without filler.